Linguistic Validation of the Chronic Respiratory Disease Questionnaire in an Arabic-Speaking Population with Chronic Respiratory Diseases

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Key Words

Chronic Respiratory Disease Questionnaire · Quality of life · Arabic-speaking population

Abstract

Objective: To develop an Arabic version of the Chronic Respiratory Disease Questionnaire (CRQ) to be known as ArabiCRQ. **Materials and Methods:** We conducted a linguistic validation of the CRQ in the Arabic language. The validation process involved 4 phases, including forward and backward translations, pilot testing, and revision to produce a final version of the ArabiCRQ. Five native Arabic-speaking patients with chronic obstructive pulmonary disease completed the ArabiCRQ both in initial and follow-up visits. Wording was modified according to feedback the participants provided. **Results:** Two of the patients' scores changed appreciably, despite ensuring their clinical stability. **Conclusion:** The ArabiCRQ may be a valuable tool to assess the health-related quality of life in patients with chronic respiratory diseases.

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Introduction

Health-related quality of life (HR-QoL) is an important issue in patients with chronic illnesses in general, and specifically chronic respiratory diseases. In the Ar-

abic literature, few instruments with some limitations are available for the assessment of HR-QoL. These include the Arabic version of the Short Form-36 survey (general HR-QoL) [1] and the St. George's Respiratory Questionnaire (specific for chronic respiratory diseases) [2]. These questionnaires have few limitations. The objective of this study was to develop an Arabic version of the Chronic Respiratory Disease Questionnaire (CRQ) [3], which has been translated and used successfully in different other languages. The CRQ has been shown to be valid and responsive in patients with chronic lung disease.

Materials and Methods

The Chronic Respiratory Disease Questionnaire

The questionnaire used 7-point adjectival scales and consisted of 4 domains including dyspnea, fatigue, emotional function, and mastery. The questionnaire included 20 questions distributed between the 4 domains. Reporting of the questionnaire usually includes a total score and subscores on the 4 domains, with higher scores indicating better HR-QoL.

Linguistic Validation of the CRQ

The study was divided into 4 phases using an instruction manual for the CRQ application. In addition, a linguistic validation agreement was obtained.

Phase 1 included forward translation of the CRQ from English into Arabic. This was done by 2 native Arabic-speaking translators who are bilingual in English (F.A. and M.A.). The translations were done separately, and a final reconciliation version was

Table 1. Overall scores

Patient No.	Initial score				Follow-up score			
	dyspnea	fatigue	emotional	mastery	dyspnea	fatigue	emotional	mastery
1	4	5	4.29	3.75	4	5.75	4.57	4
2	4.33	2.25	2.43	2	4.67	2.75	3.14	2.75
3	5	4.75	4.14	4.5	6	5.5	5.14	5.25
4	4	2.5	3.71	3	4	3.5	4.14	3.5
5	5	3.75	3.71	3	5.5	5	5	4.75

The dyspnea domain was included in questions 1–5, fatigue in questions 8, 11, 15 and 17, emotional domain in questions 6, 9, 12, 14, 16, 18 and 20, and the mastery domain in 7, 10, 13 and 19.

developed by consensus. A project manager was involved for updates and supervision. The phase was concluded by developing the forward translated version, supplemented by a report to the project manager.

Phase 2 included backward translation of the phase 1 version from Arabic to English, through a professional translation center, without any access to the original CRQ. This back-translated draft was reviewed by one of the study's authors (F.A.) and presented to the project manager for comprehensive revision to resolve any misunderstandings, mistranslations, or inaccuracies. Developing a backward translated version and a final consensus report concluded phase 2.

Phase 3 included testing of the questionnaire version obtained in phase 2 on 7 patients with chronic respiratory disease who are native Arabic speakers. These patients were identified at the King Saud University affiliated hospital. Patients were identified by a study investigator (M.A.) for eligibility. They underwent face-to-face interviews with a research assistant, who was instructed to propose alternative translations if needed. Patients were interviewed in a follow-up visit, at least 2 weeks apart from their initial visit. The research assistant interviewed them again to complete a follow-up version of the questionnaire.

Phase 4, the last phase, included proofreading and finalization of the final ArabiCRQ version. This step incorporated difficulties encountered during the pilot testing and solutions suggested by patients, project manager, research assistant, and study authors. Accordingly, modifications were introduced to the questionnaire after thorough discussions between the investigators and the research manager. The final product of the study was obtained eventually and was referred to as the ArabiCRQ.

Procedure

Seven patients with chronic obstructive pulmonary disease were identified to complete both the initial and follow-up ArabiCRQs. Two patients were excluded from the study because of missing data. The duration between the 2 administrations for the remaining 5 patients (1 female, 4 males) ranged between 14 and 18 days (mean 15.6 days). All participants were clinically stable throughout the study.

Results

During the translation phases, some wording was adjusted to be more comprehensible to the target population. Few changes were made due to cultural considerations. These included changing the term 'bending' as it might connote embarrassing sexual references to patients completing the questionnaire. 'Bending' was replaced by 'leaning to pick up items from the ground'. Sexual intercourse was also added. These changes were acceptable and were adopted in the final version of the questionnaire. The overall scores obtained from the included participants are shown in table 1. The change in the mean score on each domain was calculated as the difference between the mean score from the follow-up and the baseline value. It was noted that 2 patients (3 and 5 in table 1) exhibited significant change across all domain scores. Fatigue was a common domain showing appreciable change between the two visits.

Discussion

In this study, a comprehensive linguistic validation was conducted to obtain an Arabic version of the CRQ. The final draft was tested on a group of patients, after which a modified final version (the ArabiCRQ) was produced.

The use of questionnaires has the advantage of eliminating the subjective assessment of the health care professional from one visit to another. It also gives an impression of the patient's previous perception of symptoms if the health care provider had not assessed the patient in the past.

Measuring the HR-QoL might be challenging for physicians as it may take a long time during the overall assessment (or follow-up) of their patients. Providing a self-assessment tool that may take around 8–10 min to complete in the waiting room of the respiratory clinic can help overcome this obstacle.

Assessment of HR-QoL in the Arabic population using a validated tool like the ArabiCRQ can accommodate certain cultural issues, such as praying and camping in the desert.

This study has some limitations. The small sample size may constitute a significant disadvantage in many forms. In addition, and despite encouragement, 2 patients did not answer the minimum required number of questions in the dyspnea domain. Studies of the measurement properties of the ArabiCRQ are required. These properties include validity, which might be studied using other tools like the Short Form-36 survey or St. George's Respiratory Questionnaire, and responsiveness.

It was also noted that despite confirming clinical stability, some patients showed a substantial change in their symptom perception. This can be overcome in the validation study by applying the global ratings of change to en-

sure strong association between the responses. The purpose of the global rating of change is to provide a global measure that can be used to measure and interpret changes in HR-QoL [4].

Conclusion

This report outlined a linguistic validation of the CRQ in the Arabic language. The final version of this ArabiCRQ was modified after being tested on native Arabic-speaking patients with chronic obstructive pulmonary disease. The psychometric properties of ArabiCRQ need to be further evaluated in a larger study.

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